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submitted to AL
Hanke

Nomination Form for Superfund Awards

I am nominating the following individual/team:

Name: **Virginia-Carolina Chemical Phosphate Fertilizer Team**

Area of Responsibility: **Superfund**

Region: **IV**

Office:

For the following award (place an X next to the appropriate award):

	On-Scene Coordinator (OSC)
	Remedial Project Manager (RPM)
	Site Assessment Manager (SAM)
	Community Involvement Coordinator (CIC)
	Leader/Mentor (L/M)
X	Superfund Team
	Outstanding Achievement (Please specify area: _____)
	Record of Decision (ROD) of the Year

In the following criteria (you must address **at least 4** criteria):

X	Project Management Planning
	Complex Coordination And Negotiation
X	Initiative in Using Innovative Technologies, Techniques, or Processes
	National Benefit
X	Community Involvement/Outreach
X	Productivity/Efficiency
X	Exceptional Team Efforts
	Reuse/Revitalization



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History/Background of the Virginia-Carolina Chemical Phosphate Fertilizer Team:

Production of phosphate-based fertilizers using sulfuric acid and the lead chamber process began in the 1870's, and was established in the Southeastern United States by the early 1900's. By the late 1930's, the top three phosphate fertilizer-producing states were North Carolina, South Carolina, and Georgia. Recent site assessment activities in Charleston, SC, and Wilmington, NC, discovered a concentration of these former fertilizer facilities with lead, arsenic, and acidic pH contamination in soil, groundwater, and adjacent river sediments. A multi-disciplined team from EPA-Region IV's Waste Management and Environmental Accountability Divisions was formed in the year 2000. Working with State counterparts and ExxonMobil (successor in interest to Virginia-Carolina Chemical (VCC) for environmental liability), the Team's objectives include identifying the "universe" of facilities located in Region IV, prioritizing each facility based on the potential risks to human health and/or the environment, and implementing adequately protective response actions where warranted.

Since its inception, the VCC Phosphate Fertilizer Team's accomplishments are noteworthy. A total of 40 former fertilizer facilities have been identified, screened, and prioritized in Region IV; nine (9) of these facilities have been given high priority. Of the nine high-priority facilities, Engineering Evaluations/Cost Analyses (EE/CAs) are nearing completion at three facilities in Charleston, SC, and one EE/CA has been initiated in Wilmington, NC. One time-critical removal action has recently been completed in Wadesboro, NC, and another time-critical removal action has been initiated in Augusta, GA.

Project Management and Planning:

The dedicated Team of 3 OSCs, 3 RPMs, and 3 attorneys from EPA-Region IV Waste Management and Environmental Accountability Divisions is working cooperatively with ExxonMobil to aggressively develop and implement response actions that are protective of human health and the environment as defined by CERCLA . Given the Team's level of understanding about the phosphate/fertilizer manufacturing process, the contaminants associated with these facilities, and the fate and transport of the contaminants, much of the work typically required during the Superfund process can be streamlined. The Team has used the following project management and planning strategies to speed up the cleanup process, and reduce the amount of time and the high costs typically associated with the Superfund process:

- The use of a model AOC developed specifically for these facilities has reduced the amount of time required for negotiations between EPA-Region IV and ExxonMobil at each facility;
- The use of integrated site assessments has eliminated duplication of effort, thereby reducing the amount of time and high costs typically associated with the site assessment process;
- The use of a site characterization strategy and a streamlined risk assessment has reduced the amount of data needed to make risk management decisions, thereby reducing the amount of time and high costs typically associated with the Remedial Investigation/Feasibility process; and
- The use of Time-Critical Removal Actions and Non-Time-Critical Removal Actions creates efficiency by focusing on clean-up instead of the massive investigation/evaluation typically associated with the Remedial Investigation/Feasibility Study process. A presumptive remedy approach is being developed, and will be used to expedite the selection and implementation of response actions at those facilities needing cleanup.

Using these management strategies will not only expedite remedy selection and implementation, but will help provide consistency in decision-making.

Initiative in Using Innovative Technologies, Techniques, or Processes:

In lieu of using the traditional Remedial Investigation approach, the Team has reduced the cost and time needed for both site assessment and site characterization by using rapid field screening techniques such as X-Ray Fluorescence (XRF), and on-site labs for quick turnaround on analytical results.

The Team continues to promote the examination and use of several innovative technologies to address acidic pH groundwater contaminated with lead and arsenic at the former fertilizer facilities, including neutralization of groundwater using injection techniques, and permeable reactive barriers.

Community Involvement/Outreach:

The Team consistently and comprehensively fulfills its community relations responsibilities as required by the National Contingency Plan (NCP). These responsibilities include coordinating with health agencies, conducting community interviews and developing mailing lists, developing community relations plans, keeping the local communities informed by conducting public meetings, mailing fact sheets, performing health consultations, and maintaining Administrative Record files near each facility.

Team members are currently working on the former August, GA. facility as a high priority Time-Critical Removal Action. Immediate health concerns and sensitive public relations issues, including environmental justice issues, exist because the Allen Homes community is located directly on top of contamination associated with the former fertilizer facility. Team members have addressed health issues by conducting field screening and laboratory testing of the soil, as well as soil removal actions on three playground areas. Team members have also been involved in performing a health consultation, testing the blood of residents within the Allen Homes community, and temporarily re-locating some of the Allen Homes residents. Team members have conducted a public availability session to address resident's questions and concerns, and encourage their participation in the decision-making process. Team members have maintained regular communications with the appropriate local and regional authorities, including the Augusta, GA. Housing Authority, the Agency for Toxic Substances and Disease Registry (ATSDR), and the Department of Public Health.

Exceptional Team Efforts:

The discovery of three contaminated facilities in Charleston, South Carolina, resulted in extensive research to discover the responsible parties. The Team discovered the successor in interest at the VCC properties, but more importantly it disclosed the likelihood of many other similar Sites across the Region. Team members approached the successor to VCC, which was Mobil Oil at that time. EPA proposed a cooperative effort to find and remediate contaminated former phosphate fertilizer plants. While Mobil was interested in working with EPA, the ExxonMobil merger had just begun, and the company was not in a position to enter into long term agreements with the Region.

The Team then began to undertake response actions at four facilities, while continuing the effort to identify and categorize the hazards at historic facilities, without the participation of the potentially responsible party (PRP). Following the merger, ExxonMobil was approached with the

same proposition as before, and this time they agreed to assist in the project. EPA and Exxon-Mobil agreed to share information regarding the historic fertilizer operations of VCC. This resulted in the identification of 40 probable fertilizer facilities in Region IV.

Team members interfaced extensively with state regulatory agencies throughout the Region, as well as the PRP and their environmental consultant, to bring more value to the Team effort. The initial efforts relied on a joint effort of all stake holders to identify and locate the historic fertilizer plants. Massive amounts of information, including maps and business data, much of it many years old, had to be compiled and reviewed. Following identification, team members and others performed visits to the 40 facilities located throughout the eight southeastern states. This initial screening prioritized the facilities for further review.

At this time, the Team is working on four non-time critical removals, two time critical removals, including one that will require temporary relocations of area residents. Three additional facilities are being reviewed. The ability of the Team to interface with the PRP and with the states was critical to this success. Positive results were needed at the first facilities to prove the value of this approach to the other stakeholders. The value of the team was shown by its ability to coordinate multiple responses, at various facilities with differing conditions, while dealing with regulatory agencies in different states. Key to the success was also the need to show to ExxonMobil that this particular approach was in their benefit as well. While no concessions were made as to ultimate remedies or costs, the benefit they derived was the ability to be able to plan for a known number of response actions going forward. The elimination of the "surprise" element involved in the discovery of a forgotten facility was critical from their standpoint.

The Team has always looked at this as a long term project. While the ultimate number of responses needed and the scope of those responses has not yet been quantified, the past success as a direct result of the Team's efforts, points to more success in the future.

Productivity/Efficiency:

A general similarity between the various phosphate fertilizer facilities became apparent early in the investigation of these facilities. A non-VCC facility in Charleston was the first to be investigated, since it was discharging contamination onto an unrelated but adjacent NPL Site. Initial experience with this facility led to the concept of a Team approach that could be extended to many facilities, and could be used in multiple Region IV jurisdictions.

All of these phosphate fertilizer facilities were based on the same technology. Many of them were originally constructed during the latter part of the 19th century. They used similar or identical feed stocks, and they produced the same end product. For the most part, they were located adjacent to major waterways to allow the barging of feedstock and the disposal of waste. As a result, the nature and extent of the contamination was virtually identical.

The opportunity to streamline the process immediately became apparent to the Team. Contamination consisted of lead and arsenic in the surface soils, and in the groundwater. Contamination was generally found near the location of the acid chambers, in the pyrite slag disposal areas, and in tidal creeks and marshes adjacent to the facilities where contaminated material was often disposed of. At some of the facilities, extremely acidic groundwater was encountered that assisted in metals transport into tidal creeks and marshes. While the extent of contamination differed from facility to facility, the similarity of the facilities would allow the use of presumptive type remedies at most of them, increasing the productivity and efficiency of the Team. By using a consistent approach, a tremendous amount of time and effort was saved.

This consistency allowed the use of the same Administrative Order, the same health and safety plan, and very similar work plans by the Team at three facilities in Charleston. Minor modifications to these plans were used by the Team at other facilities as well. Being able to negotiate one order for multiple facilities greatly increased the efficiency of the Team. It is anticipated that these same documents, perhaps with minor modifications, will be used going forward at additional facilities in the future.

While VCC was one of the largest fertilizer manufacturers in the country, numerous other facilities exist in Region IV. In looking beyond the VCC facilities, the knowledge gained by the Team with these facilities, could readily be applied to other similar facilities as well. In this way, the Team has become a resource of knowledge and experience that has achieved an efficient operating paradigm that can be tapped by others in the future to increase productivity in dealing with these and other types of facilities.